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ABSTRACT

Projective measurement of achievement motivation can be achieved by using a large number of scales quite suitable for this purpose and related concepts. This paper is a guide to the literature on measuring achievement motivation rather than a detailed review of each scale. The author introduces his scale which he feels is unique because it addresses general population norms. (HFG)

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SELF-REPORT MEASURES OF ACHIEVEMENT MOTIVATION: A CATALOG

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SUMMARY

As the projective measurement of achievement motivation has fallen into disrepute, more and more self-report measures have been produced. Most such instruments appear to have been devised without any awareness that other similar instruments already existed. Over 70 such are listed which are shown to have highly variable reliability and validity. There are however several instruments which appear highly suitable for measuring different variants of the achievement motivation concept.

A. INTRODUCTION

Achievement motivation has been a very popular concept in post-war psychology and it has usually been measured by some sort of projective test (such as Murray's (35) TAT). From time to time, however, many psychologists appear independently to have asked themselves why the concept should not be measured by a self-report test (such as a Likert scale). Many of them appear to have been so convinced that this must be an original thought that they subsequently devised and published self-report measures of the concept which showed no awareness of work by others along similar lines. In fact, self-report measures of "n-Ach", like projective measures, go back to the original 1938 work of Murray on the concept. Most authors of self-report measures of achievement motivation, in other words, appear not to have done even the most rudimentary bibliographical research on their topic before rushing into print. The result is a proliferation of poorly developed and poorly

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documented measures of very uneven quality. It is hoped in the present paper to bring together all the existing published work so that further duplication of effort in the field will be minimized. There are of course other such surveys and collections in the literature but the best of them (13) lists only sixteen out of the more than seventy scales that have been published.

B. FORCED CHOICE SCALES

The Edwards (9) Personal Preference Schedule, the Ghiselli (16) "SDI" and the Bass (4) "Ori" are all multi-trait inventories that include a forced-choice scale to measure achievement motivation or some closely related construct. Single scales to measure achievement motivation in this format have been described by Mukherjee (34), Weiner & Kukla (58), Lindgren (27), Atkinson & O'Connor (3), Hermans (20) and Johnston (24). The latter is also partly projective.

Although initially attractive for many purposes, forced-choice format has a number of serious pitfalls. In particular, any scale in this format can degenerate into nothing more than a social desirability scale unless it is virtually reconstructed on each occasion of its use (37). To test how serious this limitation is in practice, Ray (41) took one of the above inventories (the Bass "Ori") and reconstructed it in Likert format. It was found that in many respects the Likert and forced-choice forms of the scales had opposite validity characteristics -- with the validity characteristics of the Likert forms being much more in accord with what should be expected. Further use of ^{forced-choice} inventories would, then, be very imprudent indeed. A fuller account of the issues involved can be found elsewhere (41,47,48).

C. LIKERT SCALES

Likert (or summated-rating) scales have been by far the most common type of self-report scale.

Murray's original 10-item scale in this format was given in full in his 1938 book. He also provided a list of 15 "Sentiments of Achievement" which could presumably be used as scale items. All items are however worded pro-achievement and reliability and validity data are not provided. The one-way wording could lead to problems with acquiescent response bias (48,49) and very few other authors seem ever to have used this scale (but see 8).

The next scales to appear after Murray's work generally seem to have formed part of multi-scale inventories, such as the California Psychological Inventory or "CPI" (18), the Heilbrun (19) Adjective Check List scale and the Jackson (23) Personality Research Form (PRF). The CPI has the interesting feature of dividing motivation up into achievement via conformance and achievement via independence. All three inventories appear to provide scales with good reliability and validity but are limited in that they appear to have been developed for use with student or clinical groups only. There is also some doubt about whether a single scale from such an inventory could be used in isolation. A test of this was carried out by Ray & Bozek (50) by including the n-Ach scale of the PRF in a questionnaire together with several other non-PRF scales and administering it to a random mail-out sample of Australians. The reliability (alpha) was only .79 -- a considerable drop from the more usually reported figure of around .90. Even so, however, the reliability is reasonable for a 20-item research instrument. The Jackson scale also has the desirable feature of being balanced against acquiescence.

Another early scale was by Strodbeck (54). This was an 8-item scale which was used to generate a single n-Ach score even though it was shown to consist of two independent factors. Some validation evidence was offered but the scale had the peculiar feature of contain^{ing} only one item worded pro-achievement.

In 1960, Brengelmann (5) published a "Drive" scale of 14 items which reads very similarly to an achievement motivation scale. Only one item is worded anti-achievement (no. 11) although it is not shown as such in the scoring key. The scale appears to be a translation of a German original but reliability and validity data, at least for the English version, are not given.

In 1961 Mitchell (33) presented no less than three new scales: an adjective checklist, an ordinary Likert scale with True/False answers and a Likert scale with multiple answers. All 6 of the adjectives were pro-achievement, 8 out of 9 of the True/False items were pro-achievement and, as far as one can judge, all the⁸/multiple answer items were pro-achievement. Split half reliabilities of .84, .75 and .83 for each of the three scales respectively were reported. GPA corrected for aptitude was the validity criterion but only the adjective checklist showed a worthwhile prediction (.40) of it.

Argyle & Robinson (2) in 1962 presented two scales -- of Success-Seeking and Fear of Failure. The latter attribute does of course have an important place in the achievement motivation literature. It is in fact normally measured by self-report tests, usually the Mandler & Sarason (29) Test Anxiety Questionnaire or the Alpert & Haber (1) Debilitating Anxiety Questionnaire.

Both of these would however appear to be rather heavily laden with general anxiety so the initiative by Argyle & Robinson of providing a new "purpose-built" measure of fear of failure might reasonably have been widely welcomed and explored. It appears, however, to have passed virtually unnoticed. Neither of the Argyle & Robinson scales appear to have any published reliability or validity data.

In 1965 Kahl (25) presented a new "Occupation/^{al}Primacy" scale with five pro-achievement and one anti-achievement items. He also lists a five item achievement values scale attributed to Rosen but not referenced. There appears to be no reliability or validity data for either scale.

Also in 1965 Myers (36) presented a scale of motivation to educational achievement. Only two out of twelve items were worded anti-achievement. Strong predictive validity was demonstrated but reliability was not given. The scale was later modified by Furst (15), on which occasion a reliability of .77 was found.

In 1966 Sherwood presented a three item scale chiefly notable for its positive correlation with TAT scores (51).

Carney Mann & McCormick (6) constructed a new achievement motivation measure from the CPI by averaging scores on five other scales normally scored from that inventory.

McReynolds & Guevara (30)^{present two scales} to measure hope of success and fear of failure. There were 22 items making up two 11-item scales. Both had roughly equal proportions of positively and negatively scored items. The two scales correlated highly -- belying the conventional notion that the two attributes are orthogonal or at least factorially separable. Reliabilities of .53 and .72 respectively were reported and various validity indications were presented.

Costello (7) produced from a factor analysis two scales which seem to measure respectively Task orientation (intrinsic motivation) and Success-orientation (extrinsic motivation). Both were short and balanced and the Task-orientation scale in particular has been shown elsewhere to have good reliability and validity (44).

Entwistle presents a 24 item measure of academic motivation including 13 anti-achievement items. Reliability and validity appear to be satisfactory (11).

Mehrabian (31) presented in 1968 separate scales for males and females of the tendency to achieve. Each had 26 items with equal proportions of pro- and anti-achievement items. Reliabilities of .78 and .72 were reported and validity evidence was given. A later and more reliable version of the scale (32) abandoned separate items for males and females.

Lynn (28) presented an 8 item balanced scale with good evidence of validity but no reliability data. When checked (40) the reliability was found to be negligible.

Ray (39,42) presented a scale which resulted from work done to test the Lynn scale. It was found that although the factor-analytically derived Lynn scale had little reliability, a scale could nonetheless be produced from Lynn's original item pool by ordinary item-analysis techniques (item-total correlations) which did have satisfactory reliability and validity. Although initially not completely balanced, a later revision of the scale was balanced (44). It was also shown to have unusually high validity in its revised form (44).

Featherman (12) presented two scales of Work Orientation and Materialistic Orientation which appear to correspond fairly well to the normal distinction in the achievement motivation literature between intrinsic and extrinsic motivation. The first had 6 items with two reverse-scored and a reliability of .84 while the second had 6 all-positive items with a reliability of .72. The work motivation scale provided the best prediction of actual achievement.

Raven, Molloy & Corcoran (38) present the results of a factor analysis in which an achievement motivation factor was found. They do not however give any reliability or validity data for it.

Friis & Knox (14) present a 7 item need for achievement scale with a reliability of .53 and two items reverse-scored. There was no evidence of predictive validity for the scale.

Honor & Vane (22) report the use of an Attitudes Towards School scale from the California Study Methods Survey. The original publication, however, is given undated and seems obscure. The scale was shown to have a high correlation with GPA and other validity criteria.

Herrenkohl (21) presented ten scales to measure different factors of achievement motivation. Reliabilities were generally adequate and validity was examined. Balance against acquiescence effects was apparently attempted, at least in part.

Thames, Zimmerman & Michael (57) present six scales of a "Study Attitudes and Methods Survey". High correlations with GPA were demonstrated for several of the scales.

Smith (53) has presented a 17 item "Quick" measure of achievement motivation. Its reliability, however, was only .56.

As part of work designed to evaluate the task-orientation scale from the Bass (4) "Ori" inventory, Ray produced two task-orientation scales in Likert format -- one balanced against acquiescence and the

other not. Reliabilities of .84 and .85 were demonstrated and a variety of validity evidence was given.

Good & Good (17) present what is probably the best available measure of Fear of Failure. It has 28 items, a reliability of .86 and validity evidence. It makes a distinction between worry and emotionality. Twelve items are keyed "False".

Kreitler & Kreitler (26) present a questionnaire to measure "Cognitive Orientation of Achievement". They also present an inventory of "General beliefs" which are achievement-relevant. Both scales are balanced. Reliabilities range between .82 and .71. Predictive validity was reported. They also have a children's version of the scale. The conceptual system underlying the scales is however rather idiosyncratic and hard to follow -- perhaps because it was originally developed in Hebrew.

Strümpfer presents two scales to measure autonomous and social achievement values (55). The 16 and 8 item scales were the product of factor analysis and had reliabilities of .84 and .64 respectively. Extended scales of 24 and 16 items were also produced with some balancing against acquiescence. They had reliabilities of .88 and .81. Validity evidence was given.

Wherry & South (59) produced a 70 item worker motivation scale with a number of reasonably reliable sub-scales. Validity evidence was given.

Ray (44) produced two scales of Task and Success Orientation with respectively 16 and 10 items. Both were close to being completely balanced and had reliabilities of .80 and .78. Extensive predictive validity evidence was given.

Ray (46) produced a 30 item scale in a quest for a high reliability scale usable with general population samples. It was balanced and had a reliability of .85. As it consisted of all the items from three previously well-validated scales, validity should be assured.

Finally a scale in a very short "Catchphrase" format was devised by Ray for use in situations where very little testing time per subject is available. It had 20 items, was balanced, had some validity indications and showed a reliability of .87 (45).

D. FOREIGN LANGUAGE SCALES

There are German-language scales by Ehlers (10) and Tent (56) and a Japanese scale by Shimoyama (52). The Hermans, Mukherjee and Kreidler scales were originally developed in Holland, India and Israel so are presumably available in Dutch, Bengali and Hebrew. The 14 item Ray-Lynn "AO" scale (43) is available in German, Chinese, Hindi, Afrikaans, Marathi, Gujarati and Tagalog as well as in its original English.

E. CONCLUSIONS

It should now be evident that there are a large number of scales available which are quite suitable for measuring achievement motivation and related concepts. Only the scales devised by the present author, however, ^{appear to} come complete with general population norms. It must be stressed, however, that the present paper is merely a catalog -- a guide to the literature rather than a detailed review of each scale. It is no substitute for reading in detail the full literature on any scale that may appear to be of interest.

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